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PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of

Ashok Mantravadi

Serial No. 10/773,646

Filed: February 5, 2004

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)  
)For: CHANNEL ESTIMATION FOR A  
WIRELESS COMMUNICATION  
SYSTEM WITH MULTIPLE  
PARALLEL DATA STREAMS

) Group No. 2681

## INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicants submit herewith, in accordance with 37 CFR § 1.98, the patents, publications and other information listed on the enclosed Form PTO-1449.

## CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

## MAILING

- ☒ deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on **October 27, 2005**.

## FACSIMILE

- ☐ transmitted by facsimile to the Patent and Trademark Office.

Depositor's Name: Carrie E. Casey  
(type or print name)Date: October 27, 2005Signature: Carrie E. Casey

The references submitted herewith are those of which Applicants are aware, which they believe may be material to the examination of this application and, with respect to which there may be a duty to disclose in accordance with 37 CFR § 1.56. While the references identified may be material to the examination of this application pursuant to 37 CFR § 1.56, the citation of these references is not intended to constitute an admission that any reference referred to herein is prior art to the invention of this application, unless specifically designated as such. Additionally, the filing of this Information Disclosure Statement shall not be construed to mean that any search has been made or, that if made, such search was complete or exhaustive, or that no other material information as defined in 37 CFR § 1.56 exists.

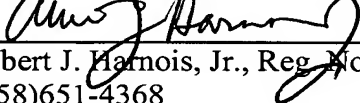
In accordance with 37 CFR § 1.97(b)(3), this Information Disclosure Statement is being submitted before mailing of the first Office Action on the merits. Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application.

A list of the references is set forth on Form PTO-1449, which is enclosed herewith, along with a copy of each cited foreign reference (copies of U.S. references are not enclosed). Applicants respectfully request that the Examiner return to Applicants a copy of the Form PTO-1449 indicating consideration of the references cited thereon.

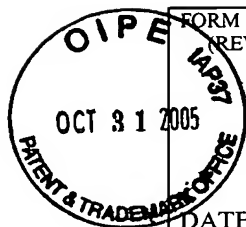
Applicants do not believe that any fees are due. If, however, it is determined that fees are owed, Applicants hereby authorize that such fees be charged to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: October 27, 2005

By:   
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FORM PTO-1449  
(REV. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE  
STATEMENT BY APPLICANT  
(Use several sheets if necessary)

DATE MAILED: October 27, 2005

ATTY. DOCKET NO.

030262

SERIAL NO.

10/773,646

APPLICANT

Ashok Mantravadi

FILING DATE

February 5, 2004

GROUP

2681

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A1					
	A2					

## U.S. PATENT APPLICATION PUBLICATION DOCUMENTS

*EXAMINER INITIAL	PUBLICATION NUMBER	PUB. DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	B1					
	B2					

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	Ref No	DOCUMENT NUMBER	DATE	COUNTRY	NAME	CLASS	SUB CLASS
	C1	1 2 1 1 8 1 9 A1	06/05/02	EP	Matsushita Electric Industrial Co., Ltd.	H04B	7/005
	C2	9 7 4 4 9 1 6 A1	11/27/97	WO	Nokia Telecommunications OY	H04B	7/005
	C3						

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Page, Etc.)

	D1	KALEONG LO ET AL., "Layered Space Time Coding with Joint Iterative Detection, Channel Estimation and Decoding," IEEE Seventh International Symposium on Spread-Spectrum Technology & Applications, Vol. 2, pgs. 308-312 (2002).
	D2	PAULRAJ A ET AL., "Introduction to Space-Time Wireless Communications," pgs. 178-184, May 2003.
	D3	ZEMEN, T. ET AL., "Iterative Detection and Channel Estimation for MC-CDMA," IEEE International Conference on Communications, Vol. 1 of 5, pgs. 3462-3466, May 11, 2003.
	D4	RALEIGH, G., G. ET AL., "Multivariate Modulation and Coding for Wireless Communication," IEEE Journal on Selected Areas in Communications, Vol. 17, No. 5, pgs. 851-866, May 1999.
	D5	JIE ZHU ET AL., "Channel Estimation with Power-Controlled Pilot Symbols and Decision-Directed Reference Symbols," IEEE Vehicular Technology Conference, Vol. 2, pgs. 1268-1272, October 6, 2003.
	D6	MEYR H ET AL., "Digital Communication Receivers: Synchronization, Channel Estimation, and Signal Processing," Wiley-Interscience, New York, NY, pgs. 649-650 (1998).
EXAMINER		DATE CONSIDERED
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		